

REMARKS

Applicant gratefully acknowledges the Examiner's noting that a non-claimed use had been stressed in the previous response with regard to the rejection over the Obata (USP 6,839,900) in view of Ohkawa (USP 5,796,708). In that regard, Applicant has thus amended their claims to focus on structural details that distinguish over the cited prior art as follows.

Note the cross-sectional view of Obata's disk in his Figures 4D and 4E. As would be the case for any conventional "second surface" disk, the grooves between lands (as seen in the stamped substrate in Figure 4B) are filled with what Obata calls a "protective film." Obata does not describe this film in detail, but conventionally it is just polycarbonate that is spin formed onto the disk. All "second surface" optical disks have such a "feature filling" layer, it acts to defocus dust and other imperfections.

Applicant's disk is starkly different -- as can be seen in the cross-section views of Figure 3 (the RAM portion) and Figure 4 (the ROM portion), the features are not "filled in" as in the Obata second surface disk. Instead, as seen in Figure 3, the lands of the writeable (RAM) portion of Applicant's disk are not filled in after being coated with the phase change layer and the dielectric layer. Indeed, as noted in page 17, lines 4 - 9, the lands (in one embodiment) may still have a height of 85 nm after final disk manufacture such that the lands are coated with the phase change layer and the dielectric layer. Similarly, as seen Figure 4, the bumps in the ROM (read only) portion of Applicant's disk are still present after being coated with the phase-change layer and the dielectric layer. Accordingly, Applicant has written support to amend claim 1 such that "a height of the bumps and a height of the lands exceeds a combined thickness of the phase-change material and the dielectric layer."

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Because the dielectric layer must then be substantially thinner than the feature height, it has no real defocusing effect: the disk becomes a "first surface" disk in that the information layer is optically the "first" layer encountered by a laser beam with regard to any defocusing.

That is not the only feature of Applicant's novel disk. Applicant has amended the ROM portion to be a "spiral track" of bumps as described, for example, on page 19, line 17. Such a spiral track of bumps is conventional in any ROM disk such as audio CDs or video DVDs. Thus, during manufacture, Applicant's substrate need merely be stamped with the spiral track of bumps encoding whatever read only content is desired as well as the land portion, which enables a RAM/writeable portion as well. These features are simply coated with a phase-change layer and then a dielectric layer is formed as the final layer. In sharp contrast, prior art ROM/RAM disks were cumbersome affairs requiring masking of the ROM area while the RAM is formed and vice versa.

The prior art stands in sharp contrast. For example, not only does the Obata reference neither teach nor suggest the height limitations of the phase-change layer and the dielectric layer with respect to the stamped features, Obata does not disclose a spiral track of bumps as the ROM portion. Instead, Obata is plainly teaching a bar code label as stated in Col. 8, lines 5-16:

The disk cartridge identification information is recorded by forming a plurality of rectangular patterns each having its length in a radial direction of the optical disk and its width in perimeter directions thereof, and spaced apart from each other in the perimeter directions. More specifically, the disk cartridge identification information is expressed by a combination of compression and rarefaction of a gap between the plurality of rectangular patterns in the perimeter directions, or by a combination of different sizes of the plurality of rectangular patterns in the directions of its width. The above-mentioned rectangular pattern can be formed, for example, by the following process.

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The additional cited prior art adds nothing further. For example, Ohkwawa disk is plainly showing a "feature filled" second surface disk in the cross-section of Figure 1. Thus, claim 1 is patentable over the combination of the Obata and Ohkawa references.

The Takemura reference (USP 5,923,640) is a conventional hybrid ROM/RAM disk. Applicants readily admit that such hybrid disks are in the prior art. However, as taught by Takemura they were cumbersome affairs, requiring the separate formation of the ROM and RAM areas in that the phase change layer used to form the RAM area was not used to form the ROM area. This may be plainly seen in Takemura's Figure 9, in which the phase-change layer (element 16) that coats the RAM area (element 2) is not covering the ROM area (element 3). Thus, Takemura in no way teaches or suggests the inventive combination of claim 1 wherein the phase change layer is used to coat both the ROM and RAM portions. The Sonnenschein reference (USP 4975398) adds nothing further as it does not disclose or suggest a hybrid disk. The same is true for the Phillips, Muller, Pan, Kumagai, Nakamura, and Nakashima references. Accordingly, claim 1 and its dependent claims 4, 7, 10, 11, 12, and 15 are patentable over the cited prior art.

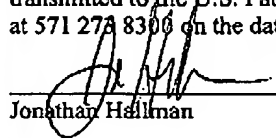
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CONCLUSION

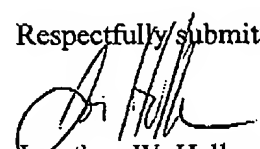
For the foregoing reasons, Applicant believes pending Claims 1, 4, 7, 10, 11, 12, and 15 are allowable, and a notice of allowance is respectfully requested. If the Examiner has any questions regarding the application, the Examiner is invited to call the undersigned Attorney at (949) 752-7040.

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Date of Signature

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